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## CLAIMS

1. A method of decontaminating, disinfecting or sterilizing an article which method comprises placing the article in an electrolytic system with an oxygenated electrolyte and applying a potential difference to the electrolytic system.
2. A method according to claim 1 wherein the method is a method of sterilizing an article.
3. A method according to either claim 1 or claim 2 wherein the article is a medical instrument.
4. A method according to any one of the preceding claims wherein the article is a surgical instrument
5. A method according to any one of the preceding claims wherein the article comprises stainless steel.
6. A method according to any one of the preceding claims wherein the article comprises the cathode of the electrolytic system.
7. A method according to any one of the preceding claims wherein the electrolyte is an aqueous solution of sodium phosphate, sodium chloride, sodium sulphate, sodium hydrogen carbonate, orthoborate or citrate.
8. A method according to claim 7 wherein the electrolyte is an aqueous solution of sodium hydrogen carbonate.

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9. A method according to any one of the preceding claims wherein the electrolyte is either neutral or alkaline.
10. A method according to claim 9 wherein the pH of the electrolyte is substantially 7.
11. A method according to any one of the preceding claims wherein the electrolyte is aerated prior to use.
12. A method according to any one of the preceding claims wherein the electrolyte is aerated during the electrolysis.
13. A method according to any one of the preceding claims wherein the oxygen content of the oxygenated electrolyte is from 1 to 100%.
14. A method according to claim 13 wherein the oxygen content of the oxygenated electrolyte is from 50 to 100%.
15. A method according to any one of the preceding claims wherein the potential difference applied to the electrolytic system is from -1.50 to 0.25 V compared with or versus the standard silver electrode (SSE).
16. A method according to claim 14 wherein the potential difference is from -1.25 to -0.5 V compared with or versus the standard silver electrode (SSE).
17. A method according to any one of the preceding claims wherein the potential difference is applied to the electrolytic system for up to 36 hours.
18. A method according to any one of claims 16 wherein the potential is applied for 6

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to 24 hours.

19. Use of a reactive oxygen species in the decontamination, disinfection or sterilization of an article.
20. Use according to claim 19 in the sterilization of an article.
21. Use according to either claim 19 or claim 20 wherein the reactive oxygen species comprises one or more of the superoxide ion ( $O_2^{-\bullet}$ ), the hydroxyl radical ( $OH^{\bullet}$ ) and hydrogen peroxide ( $H_2O_2$ ).
22. Use according to claim 21 wherein one of the reactive oxygen species is the hydroxyl radical or the superoxide ion.
23. A decontamination, disinfection or sterilization apparatus which comprises an electrolytic system with an oxygenated electrolyte.
24. A decontamination, disinfection or sterilization apparatus which comprises an electrolytic system which, in use, comprises an oxygenated electrolyte.
25. An apparatus according to either claims 23 or 24 which comprises a container with a detachable lid.
26. An apparatus according to claim 25 which comprises a container with a lid and wherein part of the circuit wire of the electrolytic system is in the lid such that the circuit is completed when the lid is placed on the container and broken when it is removed.

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27. An apparatus according to any one of claims 23 to 26 wherein the cathode of the electrolytic system is the article to be sterilized.
28. An apparatus according to any one of claims 23 to 26 which comprises means for passing current through the article to be decontaminated, disinfected or sterilized such that, in use, the article acts as the cathode of the electrolytic system.
29. An apparatus according to any one of claims 23 to 26 wherein the article to be decontaminated, disinfected or sterilized is held between the anode and the cathode of the electrolytic system.
30. An apparatus according to claim 29 wherein the article is held in a holder attached to the lid.
31. An apparatus according to either claim 29 or claim 30 wherein the holder is made of non-conductive plastic mesh.
32. A decontamination, disinfection or sterilization apparatus for performing a method as described in any one of claims 1 to 18.